

Moore County's Long-Range Transportation Planning Process

The Comprehensive Transportation Plan

A Cooperative Effort Between Moore County, the
Triangle Area Rural Planning Organization, and
NCDOT

<http://www.ncdot.gov/projects/moorechoices/>





Before we really get started.....

Let's address some of your concerns and
Decide what you would like to do today.

Highland Trails Petition to the Secretary

Points of the Petition

Check behind me.....

Did I miss anything?

- I. Members of the Association are against any diversion of traffic east of the existing corridor. Referenced the draft 2006 CTP map.
- II. Members of the Association are particularly opposed to a freeway through the natural setting of the Highland Trails sub-division and Weymouth Woods State Park.
- III. Members of the Association expect NCDOT as the resident's representative, to notify community if the plan includes these options.
- IV. The Highland Trails community has recommendations that they would like to provide and have documented in the long-range planning process.
- V. NCDOT needs to understand the value and importance of Highland Trails community to the families that live and work here.

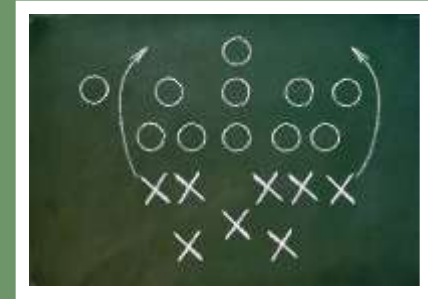
+ Accurate Information Opportunity to Provide Input Degree of Comfort



- I. **Draft 2006 CTP map.**
 - **2006 Plan -- Never Adopted. Last adopted transportation plan dates back to 1999.**
 - **Secretary Conti's Visit to Moore County and his message.**
 - **Today – Discussion about the Comprehensive Transportation Plan Process?**
- II. **Opposed to freeway through Highland Trails and Weymouth Woods.**
 - **Federal and State Law provide substantial protection for state park lands.**
 - **Today – Discussion about National Environmental Policy Act?**
- III. **NCDOT as the resident's representative, expect notification of intent.**
 - **Federal and State Law mandate due process**
 - **Secretary Conti's Visit to Moore County and his message.**
 - **Today – How a project moves from need to construction?**
- IV. **Highland Trails recommendations and participation in the planning process.**
 - **Today – NCDOT is at your disposal – Let's talk about your Vision for the County's Transportation System.**
 - **Several options for today – Your choice.**
- V. **Value and Importance of Highland Trails**
 - **We came as soon as you called.**
 - **We are here on a Saturday to be with you and try to help.**
 - **Its important to us too.**
 - **We need you to participate in the process!**

What's Today's Game Plan?

You Decide....



What is a Comprehensive Transportation Plan?

What is the process for developing a highway project?

Update about where we are with Moore County's CTP.

- Public Involvement Efforts – Charrette Report.
- Resolutions Against US 1 Bypass and For Existing Location
- Request for Strategic Highway Corridor Re-designation
- NCDOT's Response
- Travel Demand Model
- What's next after the Model is Done?

Would You Like to Stay and Participate in an Exercise?

How Much Time Do We Have?

A CTP is...

- **A long-range transportation plan for all modes of transportation: Highway, Public Transportation and Rail, Pedestrian, and Bicycle.**
- **A plan that supports community priorities, local land use plans, and protects local assets.**
- **A concept plan.**
- **A shared vision developed in a collaborative process.**
- **A tool to position Moore County to compete for statewide transportation funding.**
- **An outline for SMART GROWTH.**

A CTP is not....

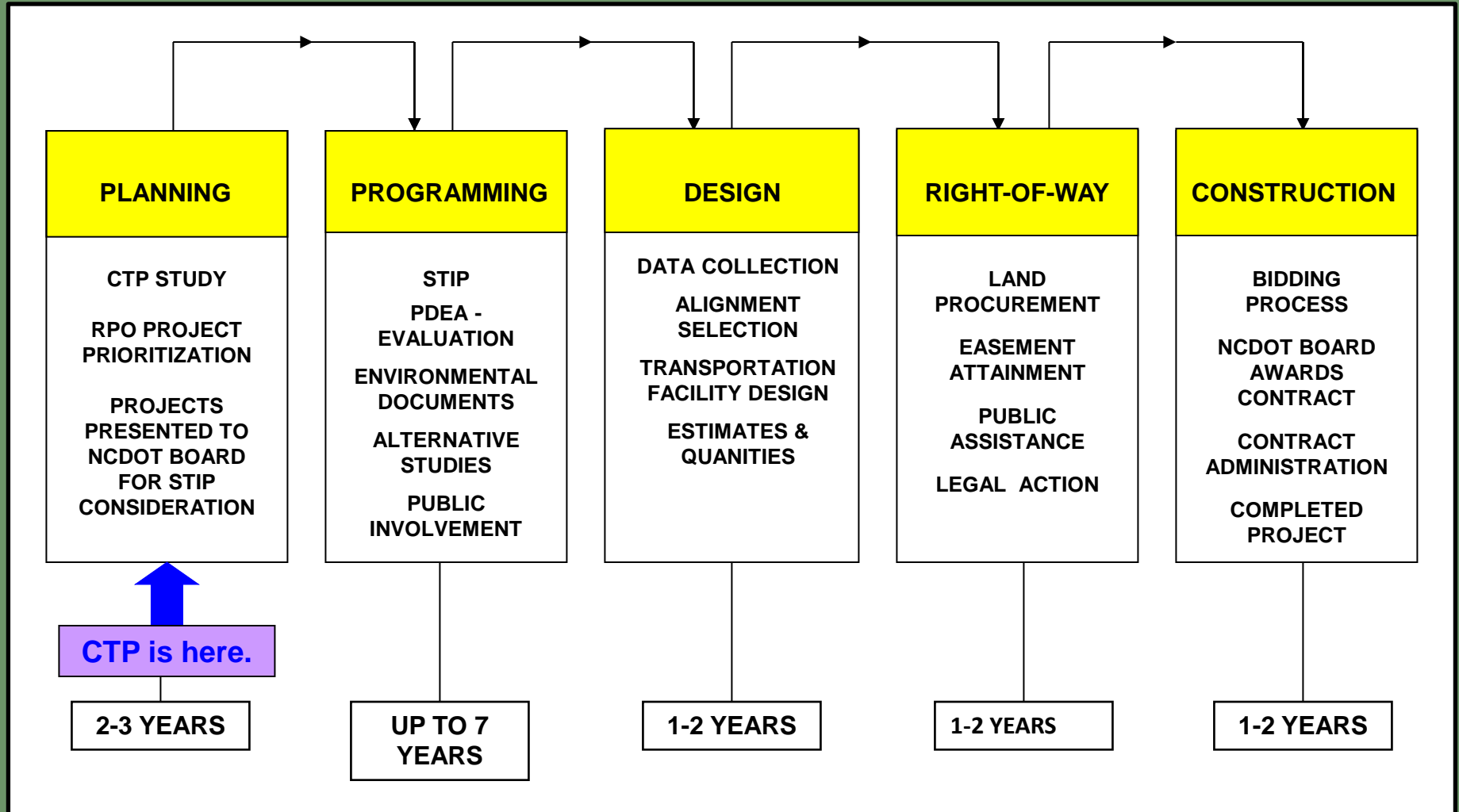
- A plan for specific roadway alignments.
- A schedule of funding or construction.
- A permanent document without **opportunity for revision**.
- About one project, one kind of transportation, one roadway, or even one community.

What is the Difference Between the CTP and a STIP Project?

- STIP (State Transportation Improvement Program) projects usually address one primary need.
- STIP highway projects usually target connections between a few specific roads and improving traffic flow and are closer to construction.
- A CTP (Comprehensive Transportation Plan) addresses future (2040) transportation needs in the county which can affect connectivity, quality of life, economic growth, and development. **It addresses the entire transportation system.**
- Since a CTP is long-range (2040), most CTP projects are unfunded.



Typical Stages of NCDOT Project Development



Why Develop a Comprehensive Transportation Plan?

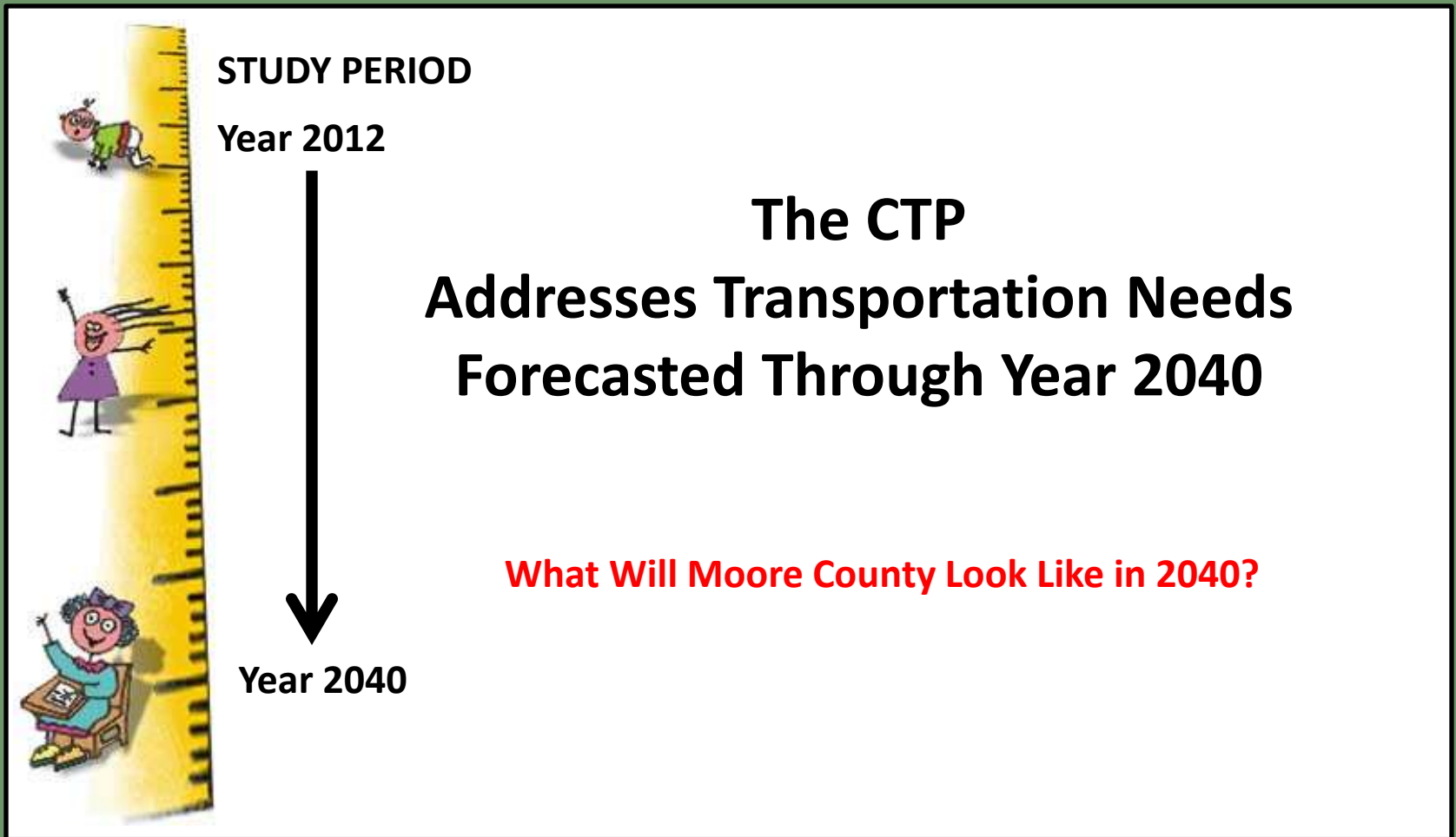
Answer: Both Federal and State Law Require It!

1. **Federal Legislation like TEA-21 and SAFETEA-LU provided the documentation that required states to develop Long-Range Transportation Planning that included both municipal and rural entities actively participating in cooperative efforts with the Department of Transportation. Now we have MAP 21.**
2. **North Carolina G.S. 136-66.2. Development of a coordinated transportation system and provisions for streets and highways in and around municipalities.**

State law mandates that municipalities and/or counties develop a comprehensive transportation plan that will serve existing and future traffic.



Planning for Year 2040



What Are The Benefits of having an Adopted CTP?

The CTP can be used as a tool for local land use planning by:

- 1) Protecting of RIGHT OF WAY for future facilities.**
- 2) Reducing the number of social and environmental impacts to the community.**

Corridor Protection



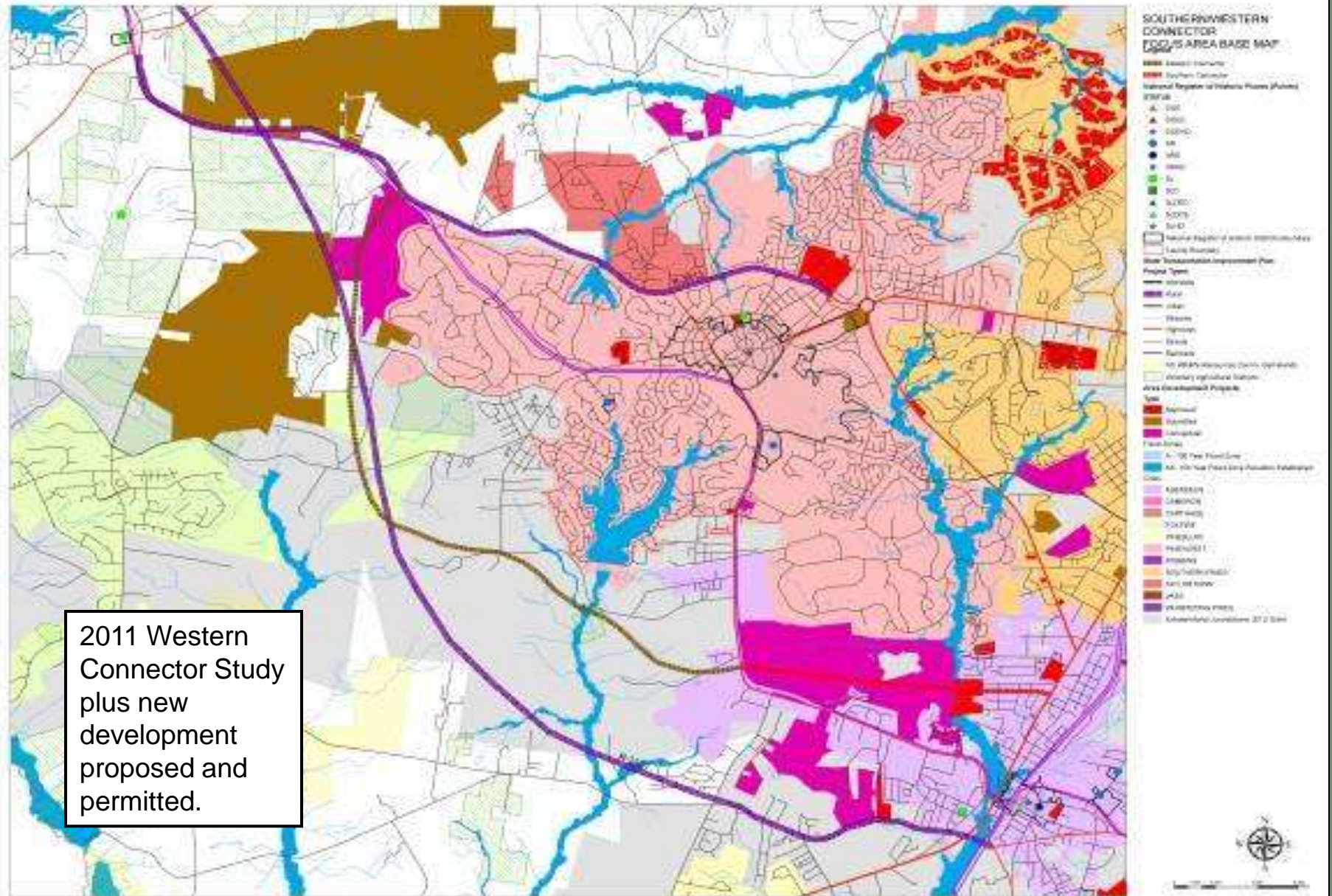
**Benjamin Parkway
(Greensboro)
Protected Corridor
in 1981**



**Benjamin
Parkway after
construction in
1990**

[illegible]2008 Western
Connector Study

Where We Are Today Without Corridor Preservation....





The CTP Is a Portal To Funding In The Prioritization Process.

Who determines what projects go into the State Transportation Improvement Program (STIP)?

- **NCDOT Leadership in response to strategic statewide needs.**
- **NCDOT Division offices in response to safety, mobility, and local needs.**
- **Metropolitan and Rural Planning Organizations in response to local needs.**

**A project's "need" must be supported by data
and come primarily from CTPs
or other existing plans.**

Without a CTP, success competing against statewide priorities will be unlikely for Moore County projects because STIP criteria is data driven.

Local, Regional, and Statewide Connectivity

The CTP ensures connectivity for the County, regionally, Statewide, and nationally through the protection and promotion of
STRATEGIC HIGHWAY CORRIDORS.



Strategic Highway Corridors are one of NCDOT's Highest Priorities

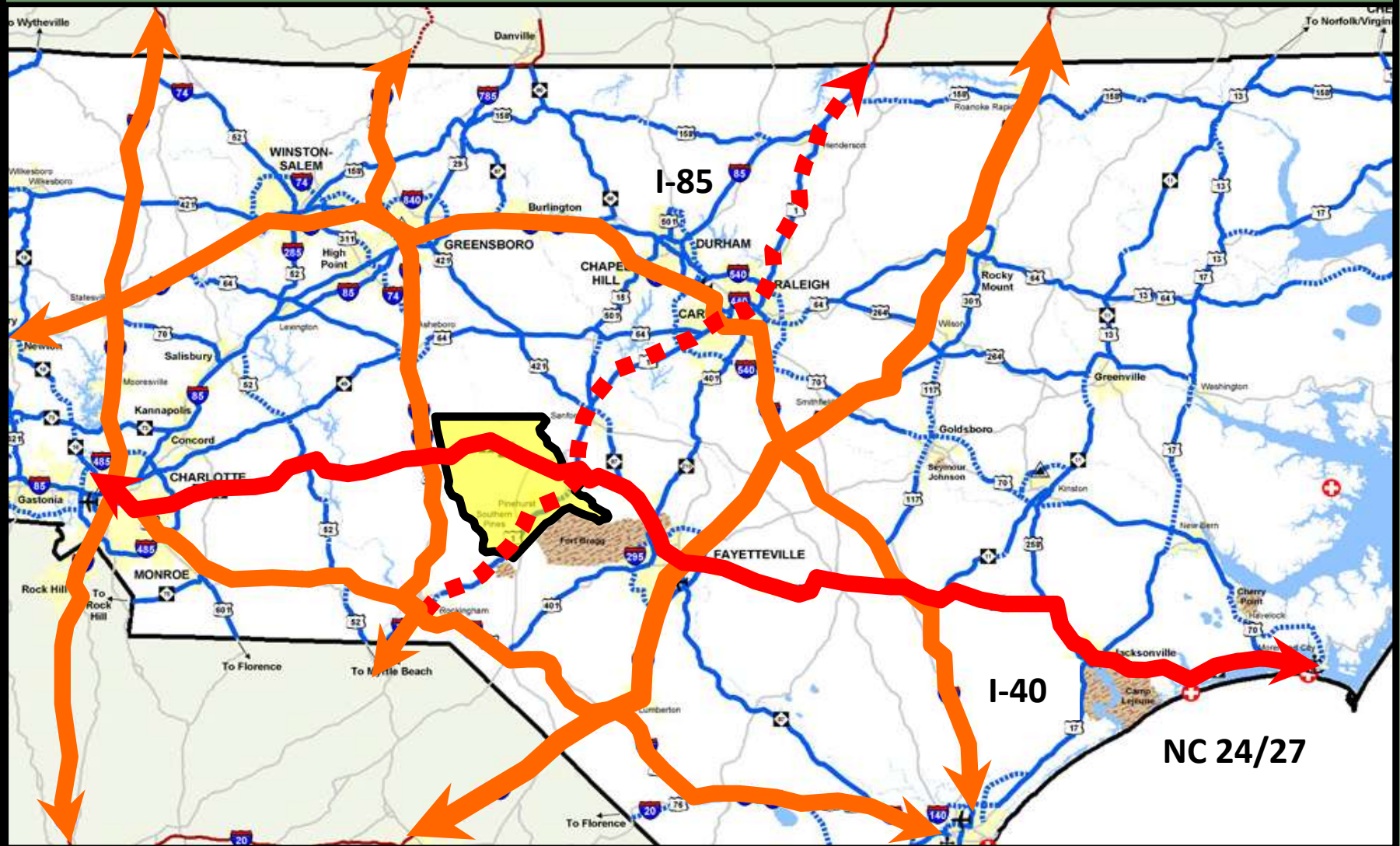
Overview of Strategic Highway Corridors in Moore

I-77

I-73/74

US 1

I-95



CTPs lay the foundation to plan for the possibilities....



Pedestrian Refuge Islands



Crosswalks

"Complete Streets" elements and strategies



Links to planned shopping & services

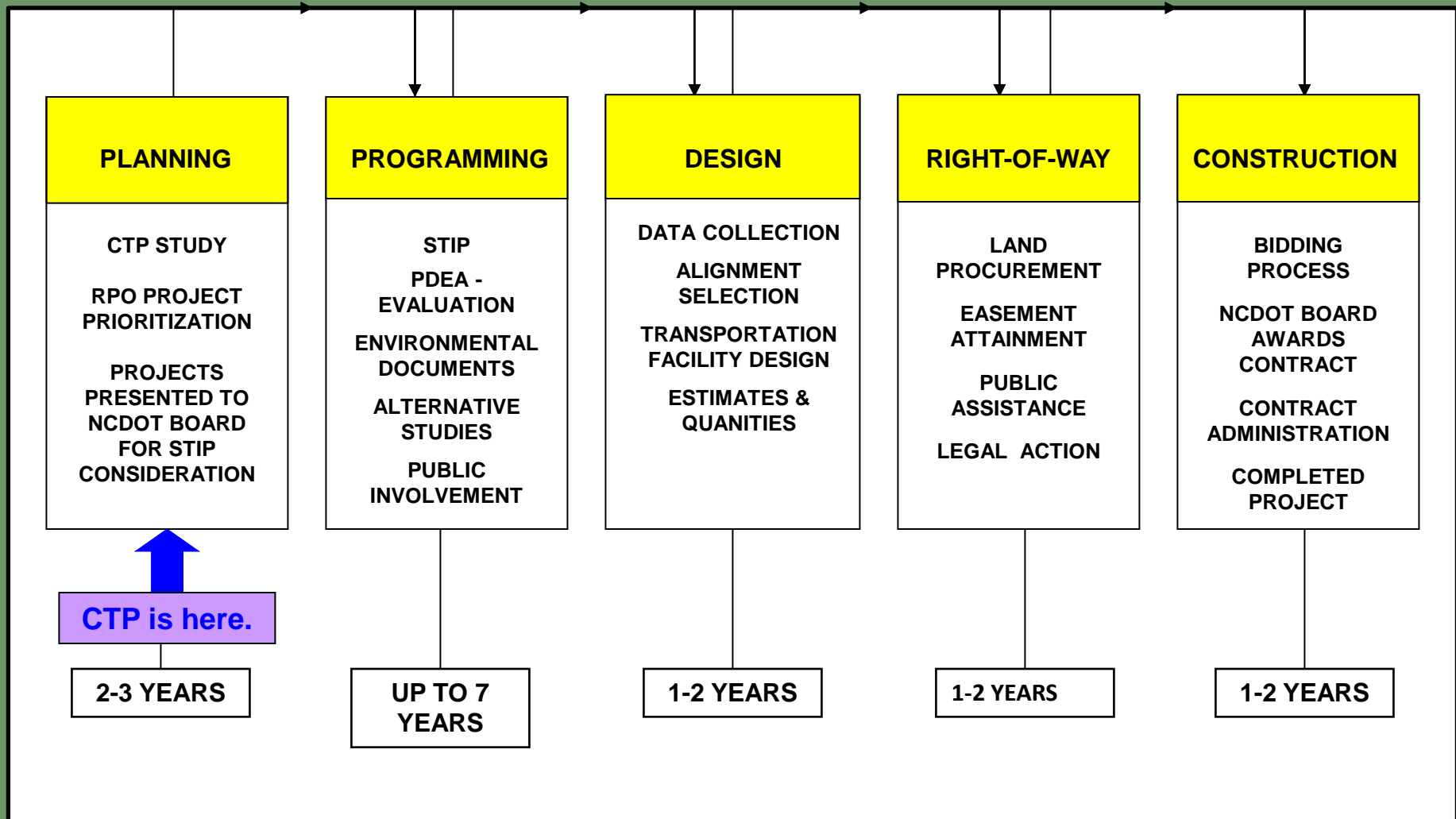
Provides access to Downtown for transit dependent population



...and taps the resources of Land Use Planning.

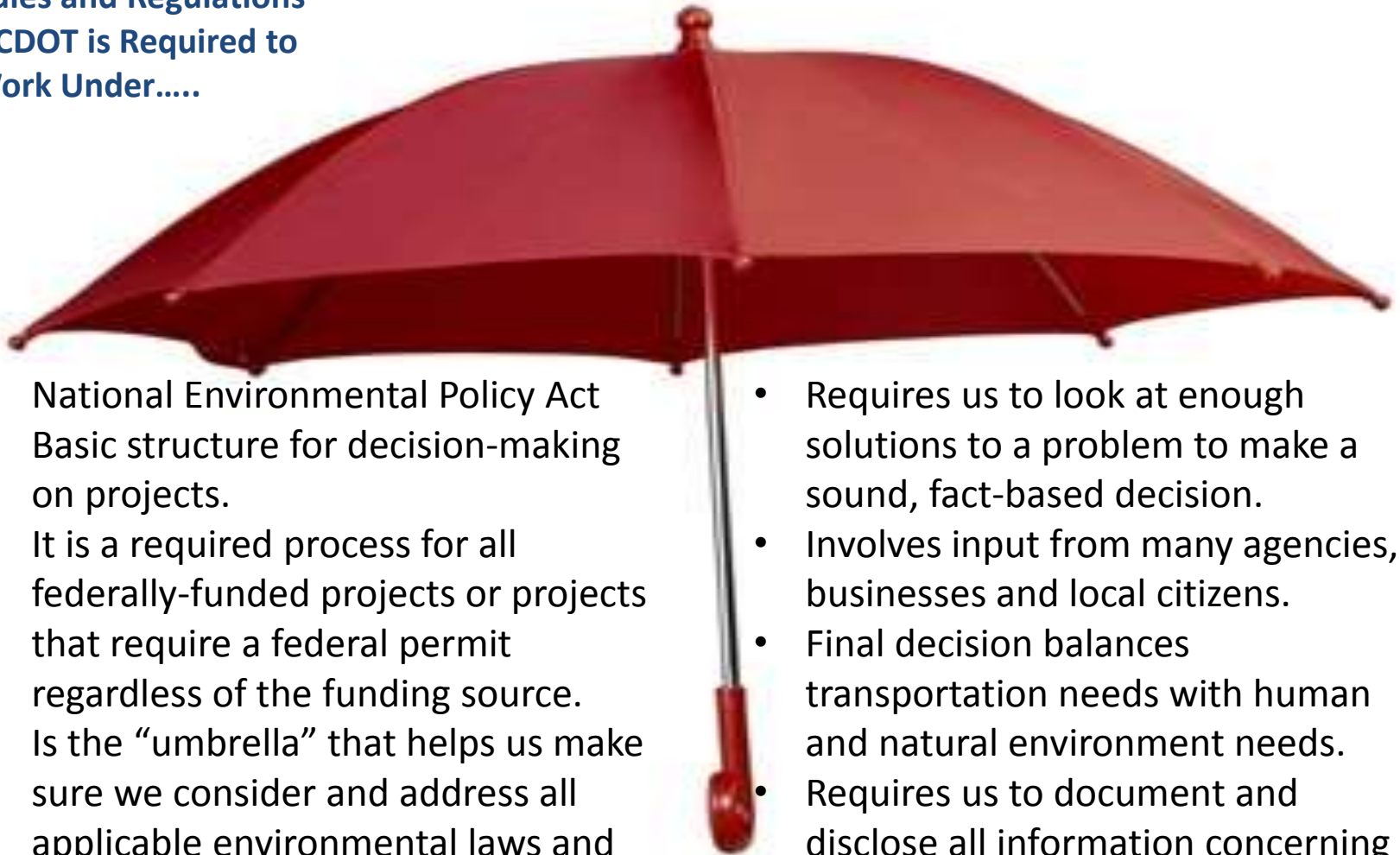
So, Remember We
Talked About Steps
to Project
Development

CTP ... DATA DRIVEN LIST OF NEEDS.



NEPA

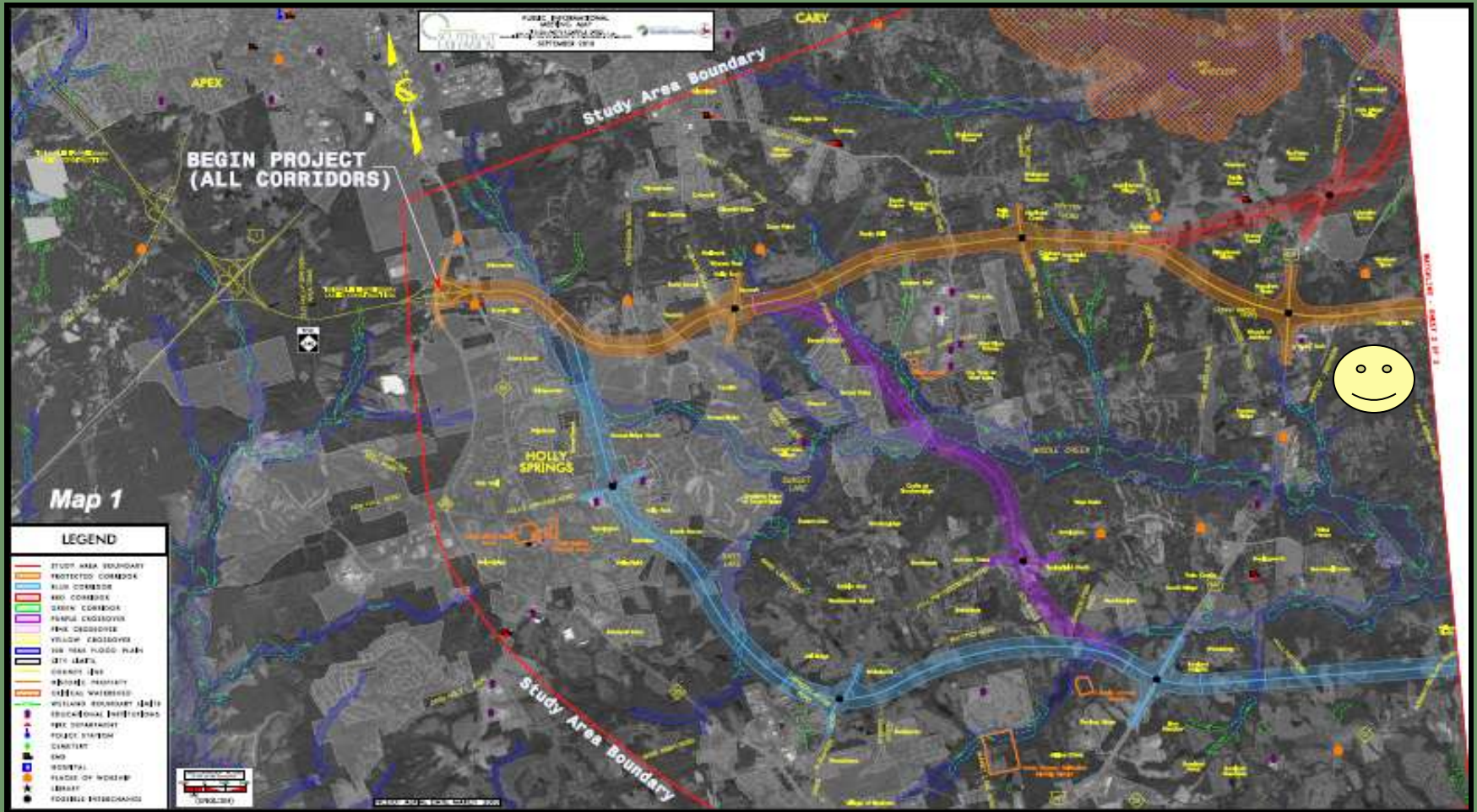
Rules and Regulations NCDOT is Required to Work Under.....



- National Environmental Policy Act
- Basic structure for decision-making on projects.
- It is a required process for all federally-funded projects or projects that require a federal permit regardless of the funding source.
- Is the “umbrella” that helps us make sure we consider and address all applicable environmental laws and regulations.
- Requires us to look at enough solutions to a problem to make a sound, fact-based decision.
- Involves input from many agencies, businesses and local citizens.
- Final decision balances transportation needs with human and natural environment needs.
- Requires us to document and disclose all information concerning our decision.

NEPA and SEPA Studies

Produce maps that look like this.....



Comparison Analysis Between Alternatives

**PUBLIC INVOLVEMENT AND NOTIFICATION
REQUIRED BY LAW DURING PROJECT
DEVELOPMENT PHASES OF ALTERNATIVE
SELECTION.**

Section O- Comparison of Alternatives



In Section O
the three alternatives are different.

The table below compares impacts to the human
and natural environment for the alternatives in this
section. It also provides information on the costs
and constructability of the alternatives.

**DOES NOT TAKE PLACE
UNTIL FUNDING AND
SCHEDULING IN NCDOT'S
10- YEAR RESOURCE PLAN
AND 5-YEAR WORK
PLANS.**

Sum of the Impacts by Alternative

Section O- Alternatives NC1, NC2, NC3 on Different Alignments							
Summary of Potential Human and Natural Impacts				Summary of Operational & Physical Characteristics			
By Section				By Section			
Topic	SECTION O			Topic	SECTION O		
	NC1	NC2	NC3		NC1	NC2	NC3
Federally Listed T&E Species Impacted	0	0	0	Mainline Track Length (miles)	5.09	5.16	4.70
Number of Stream Crossings	5	6	12	Limiting Speed**	90	80	110
Impacts to Streams (linear feet)	693	915	3,102	Operability/Constructability***	negative	negative	neutral
Impacts to Wetlands (acres)	0.40	1.63	0.20	Roadwork (miles)	5	5.9	4.9
FEMA Floodplain Crossings	0	0	0				
Federal/State Designated Rivers (crossings)	0	0	0				
Impacts to Prime and Other Important Farmland (acres)	106.22	108.13	125.78				
Forested uplands (acres)	25.26	20.91	46.21	Rail and Road Construction Cost (millions \$)	\$69.60	\$65.50	\$66.80
Hazardous Materials Sites	2	2	0	Utility Relocation Cost (millions \$)	\$0.20	\$0.20	\$0.19
Residential Relocations	9	9	3	Right-of-Way Cost (millions \$)	\$3.56	\$4.19	\$3.84
Business Relocations	0	0	0	TOTAL COSTS (millions \$)	\$73.36	\$69.89	\$70.83
Public Schools Impacted	0	0	0	<p>* Note that several resources protected under Section 106 and/or Section 4(f) span one or more project sections; impacts are reported for each project section.</p> <p>** Limiting Speed is the maximum train speed through the most restrictive curve within the section based on current design assumptions; average running speed through the section would be greater.</p> <p>*** Positive-negative-neutral denotes significant differences in operability or constructability between the alternatives.</p>			
Noise (Impacted Receptors)	26	26	10				
Noise (Severely Impacted Receptors)	6	6	5				
Vibration (Impacted Structures)	14	11	6				
Section 4(f) Uses- Historic *	2	2	1				
Section 4(f) Uses- Parks *	0	0	0				
Section 4(f) De Minimis- Historic *	1	1	1				
Section 4(f) De Minimis- Parks *	0	0	0				
Section 106 Adverse Effects *	2	2	1				

Highland Trails

CTP Status and Update

I. History of Moore County CTP

- Beginning at the end of 2010
- Public Involvement and Charrettes November 2011
- Reclassification Request and Outcomes
- Message from the Secretary Highlights More Open Approach to Transportation Policy for Moore County and Others.
- Charrette Results and Public Involvement Efforts Going Forward

Highland Trails

CTP Status and Update...Continued

II. Expectations for 2013 Milestones

- Data Collection
- O & D study
- Travel Demand Model Development
- 2040 No Build Report

III. Travel Demand Model

- How the tool is used – Its purpose and objectives
- Status and projected schedule
- Highlights of some of the work done so far



Strategic Highway Corridors Vision Plan Revision Request

History

- TARPO resolution and support of request submittal - **February 16, 2012**
- TPB recommendations to Strategic Management Committee - **March 6, 2012**
- NCDOT received the request from TARPO on **April 10, 2012**
- NCDOT leadership provided decision **July 16, 2012**

****All correspondence available on CTP project webpage: <http://www.ncdot.gov/projects/moorechoices/>**

****For additional detail, please see Summary of Significant Events**



Strategic Highway Corridors Vision Plan Revision Request

NCDOT Response: July 16, 2012

- The 2040 Plan, the statewide 2040 model, and the North Carolina Multi-modal Investment Network (NC Min) update and re-classification request.
- Re-classification decision on hold until deficiencies are quantified.
- Development of the Moore County CTP multimodal plans and solutions deferred.
- CTP study, O and D study, model development, and specific corridor analysis to continue as part of the Moore County CTP.
- NCDOT will quantify the deficiencies and work collaboratively with TARPO and Moore County stakeholders to solve the issues around the five focus areas.

Refer to Website: <http://www.ncdot.gov/projects/moorechoices/>

September News Letter 2012 – Moore County CTP Update



Strategic Highway Corridors Vision Plan Revision Request

Consideration of all possibilities:

Strategic Management Committee's decision includes investigation of viable alternative facilities for US 1.

Viable Alternatives Must:

- Be safe.
- Provide effective access to, and efficient passage through, the county.
- Accommodate projected future traffic.
- Comply with state regulations for intrastate system facilities.
- Meet Federal requirements of evaluating impacts to under-represented populations.



September 18, 2012
Secretary Gene Conti

The Secretary's September Visit To Moore County

- NCDOT is not interested in forcing a community to accept a project for which there is strong local opposition.
- Assured MCTC that there had never been an NCDOT project that defined US 1 as a Bypass.
- Reminded that completing a CTP is called for under state and federal law.
- Criteria relevant to the county's request will be examined as part of the CTP analysis.



January 4, 2013
Secretary Anthony Tata

- Retired U.S. Army brigadier general,
- Three decades of public service as a military officer and public school system leader, and
- Planned and implemented complex transportation and infrastructure plans in developing countries.

The Report

The Document - Seven sections

1. Executive Summary
2. Introduction
3. Census Data, Demographics, and Charrette Participation
4. The Strings and Ribbons Exercise
5. Data Collection and Charrette Results
6. Charrette Maps
7. Conclusions

Available On-line Only

<http://www.ncdot.gov/projects/moorechoices.com>

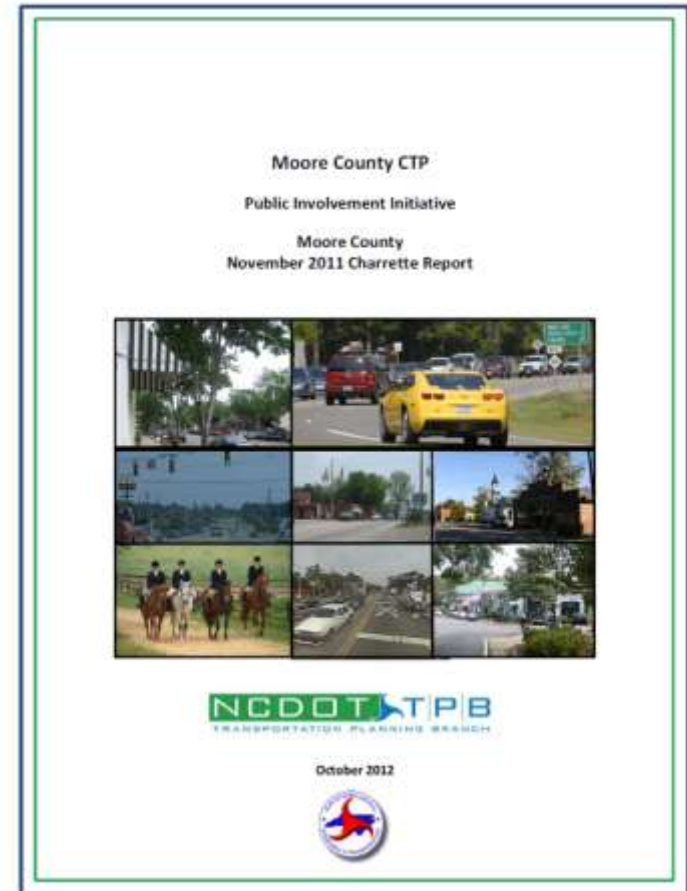
The Appendices – Reference Material

Appendix A-H

The Databases

Charrette Solutions Mapping Database

Moore County November 2011 Public Comment Database



1. Charrettes accomplished the intended objectives:

- **479** unique participants received information about CTP and the county's transportation issues.
- **80%** understood purpose of the charrettes, **68%** described charrette as effective.

2. Preservation of agricultural lands was a common priority among participants.

- **86%** of participants indicated this was important to the county's long-range transportation vision.

3. High level of frustration evident from responses .

- Responses reveal a disconnect between what residents perceive as necessary and what planning agencies are indicating what will be needed to accommodate future traffic.

4. Participants mapped their solutions to transportation issues:

- US 1: **70%** of the maps submitted provided improvements to the existing US 1 corridor.
- NC 24/27 Carthage: **83%** of maps submitted showed a northern bypass solution.
- NC 24/27 Cameron: **82%** of maps submitted showed a southern bypass solution.
- Western Connector: **58%** of maps submitted showed solutions entirely on the existing corridors of Hoffman Rd. and Roseland Rd.

5. Many participants wanted to expand transportation choices:

- **58%** wanted to increase mode choices
- **17%** wanted to increase public transit
- **80%** wanted to increase bike paths and trails

Charrette Report

Summary of Significant Points *(continued)*

6. Walthour-Moss Foundation received more protective stickers than any other resources:

- 36% of participants Priority Sticker selection.

7. Data assessment identified several concentrations of groups within the charrette population sample:

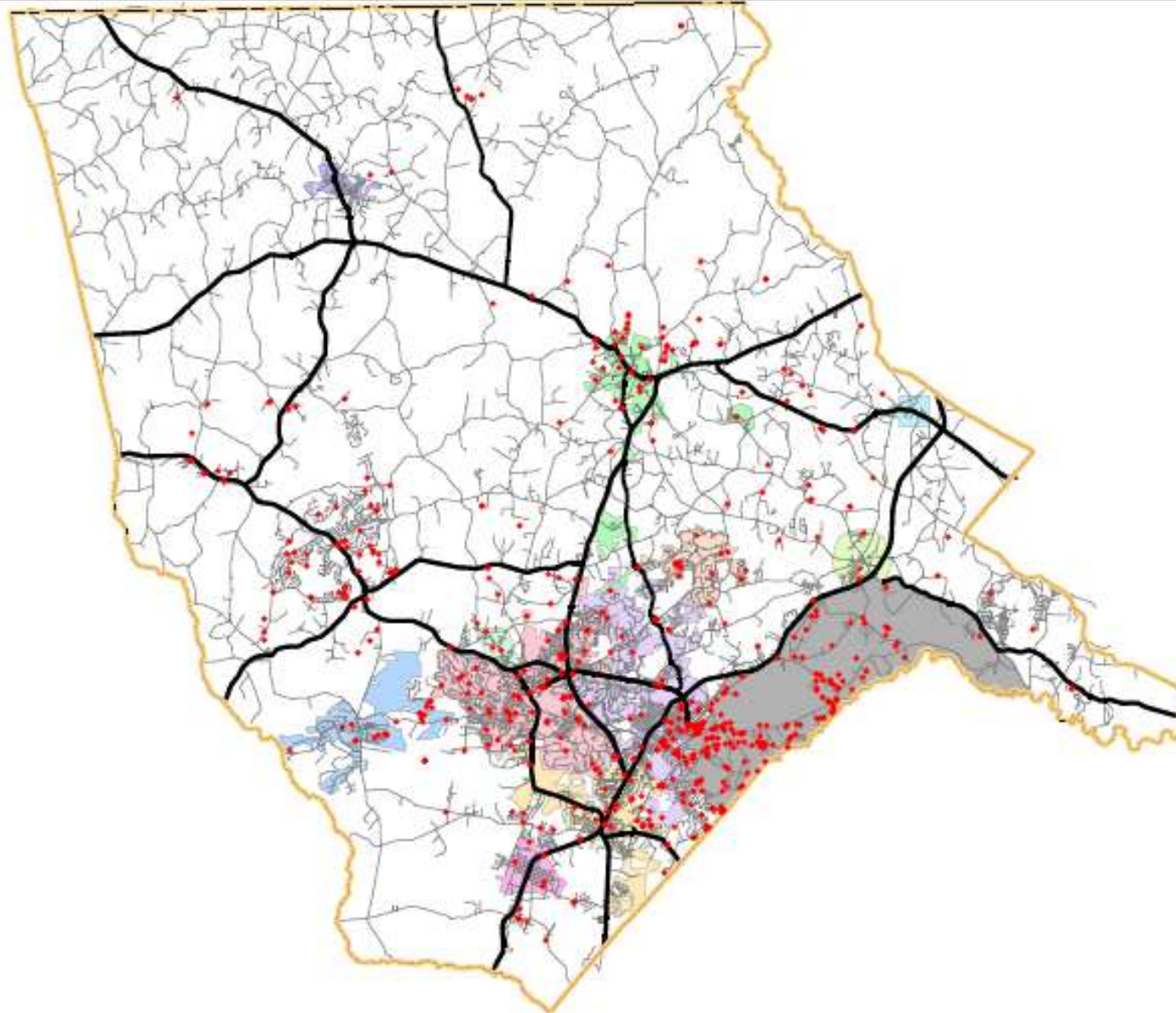
- 63% of respondents listed household income greater than \$70,000 per year.
- 93% of respondents were White.
- 44% of respondents reported living in Southern Pines.
- 19% of the total attendees provided addresses that fell within the boundaries the Walthour-Moss Foundation delineated as Horse Country.

The demographic assessment of participants showed a disproportionate representation in the categories of community, income, and race. Results of the data collected at the events should be viewed as representative of, and as such weighted by, the dominating groups identified.

8. Public engagement results provided by the November 2011 charrettes alone are not sufficient to formulate a countywide consensus:

- Lack of minority, low, and middle income participants; continued efforts to improve outreach efforts and engage under-represented population sectors are necessary.

November Charrettes



Moore County Participation Screening Map

Legend

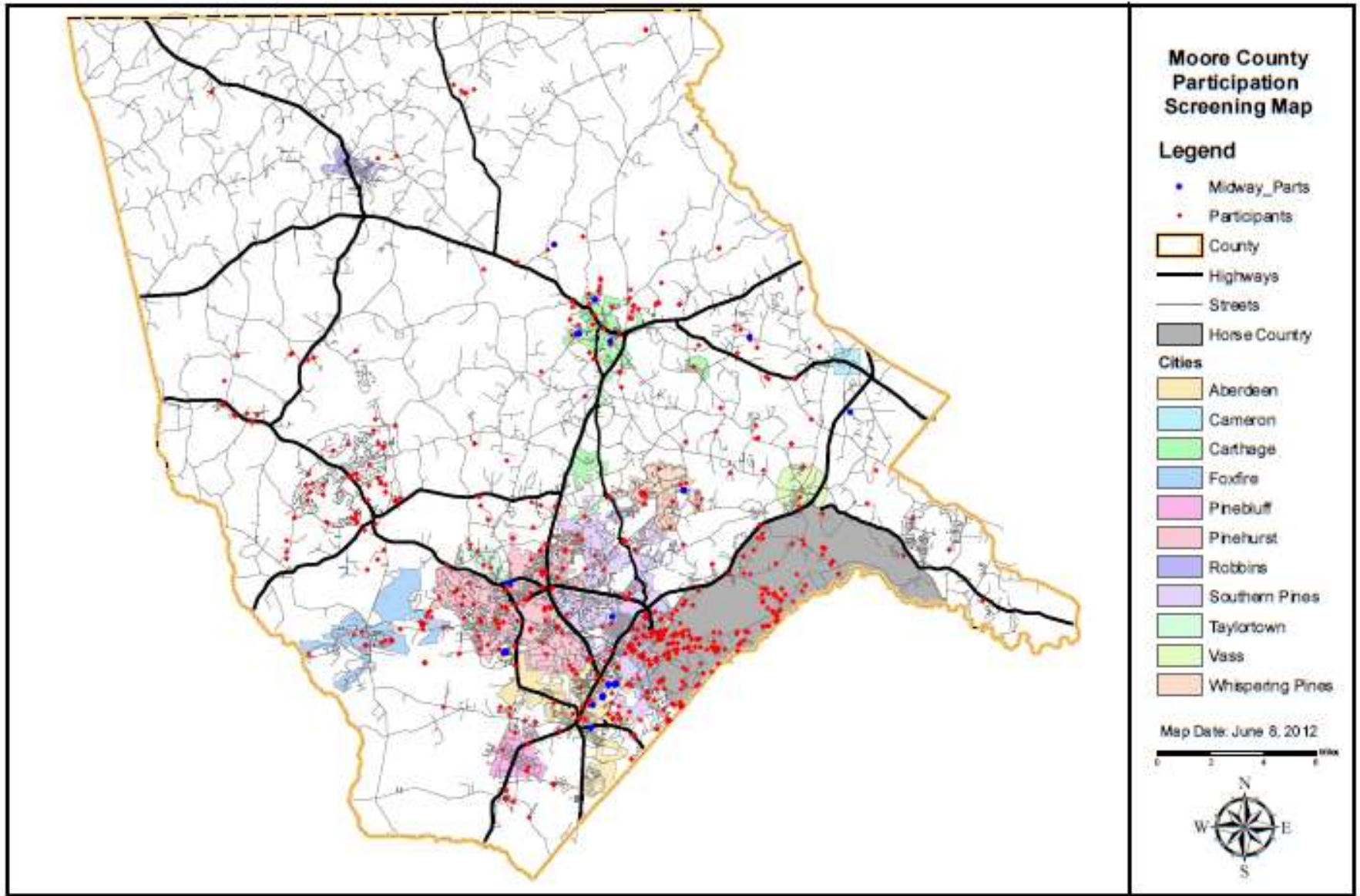
- Attendees
- County
- Highways
- Streets
- Horse Country
- Communities**
- Aberdeen
- Cameron
- Carthage
- Foxfire
- Pinebluff
- Pinehurst
- Robbins
- Southern Pines
- Taylortown
- Vass
- Whispering Pines

Map Date: June 8, 2012

0 2 4 6 Miles



Cumulative Participation



What is a Travel Demand Model?



- It is just **ONE** of the tools used in the analysis of transportation systems . Key word being **System**.
- It can be used to help forecast travel characteristics in the future at various planning levels: local, regional, and statewide.
- It is a mathematical approach to understanding how changes in land use, population, and area employment will impact the transportation system.
- It is a way to measure the future impacts of growth and development by examining the limits of the existing infrastructure.



What a Travel Demand Model is Not....

A Traffic Impact Analysis or TIA.

Traffic Impact Analyses (TIAs):

- Help forecast impacts of growth and development.
- Refined scale: intersection level, Level of Service, number of lanes, number of turn lanes, traffic signal phasing, cycle lengths, and signal system timing.
- Help determine pre- and post- conditions of a roadway's Level of Service in the consideration of new development.

But, TDMs and TIAs share some of the same data, and TDMs can be used to develop a similar tool.

A TDM should not be considered an exact measure of future traffic volumes.





Purpose of the Travel Demand Model is

...To Help Decision Makers See What the Future May Hold
Is it absolute? No, but it IS a good estimate.

Have you ever turned to one of WRAL Computer Models for storm tracking?



Travel Demand Model analysis is performed to assist decision makers in making informed transportation planning decisions.

The strength of modern travel demand forecasting is the ability to ask critical “what if” questions about proposed plans and policies.

Building A Travel Demand Model

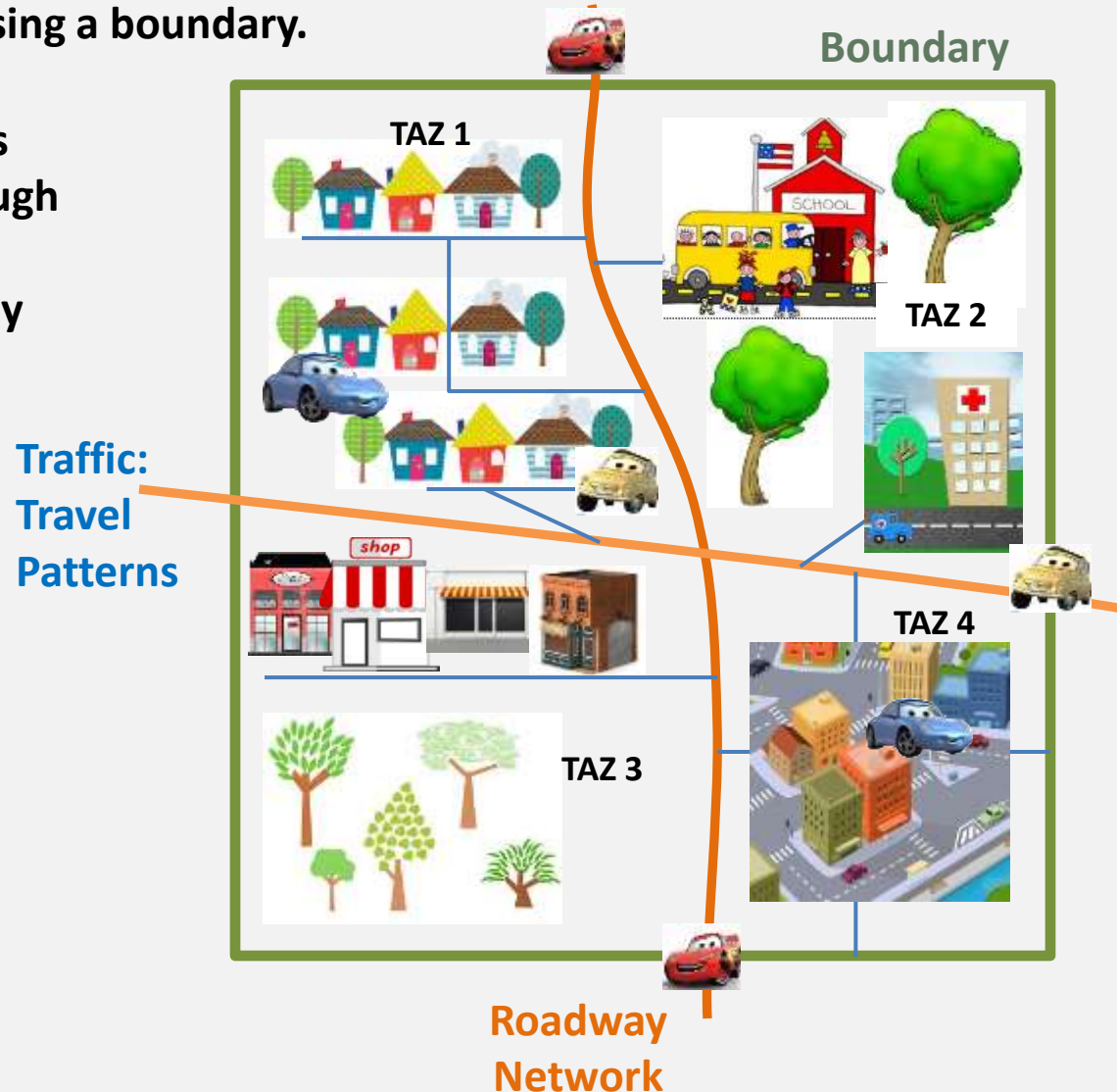
The Foundation – Network and Data

1. Define a study area using a boundary.

2. Apply the major roads within and passing through the area: all NC and US routes plus heavily or key local routes.

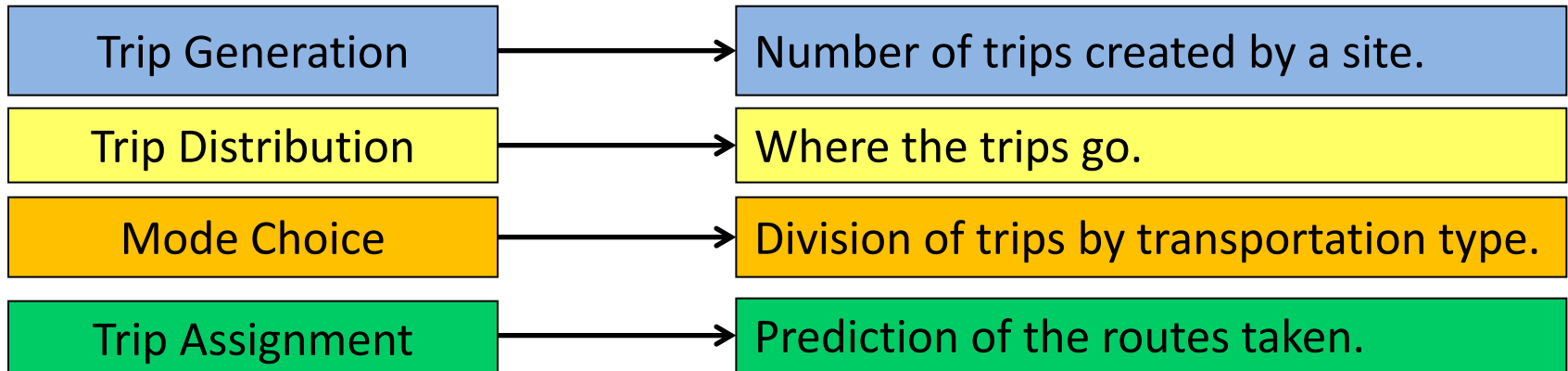
3. Input Census and local data about population, employment, and travel patterns.

4. Divide study area into smaller areas for closer study called Traffic Analysis Zones or TAZs.



How A Travel Demand Model Works

Modeling 101 – The Basics



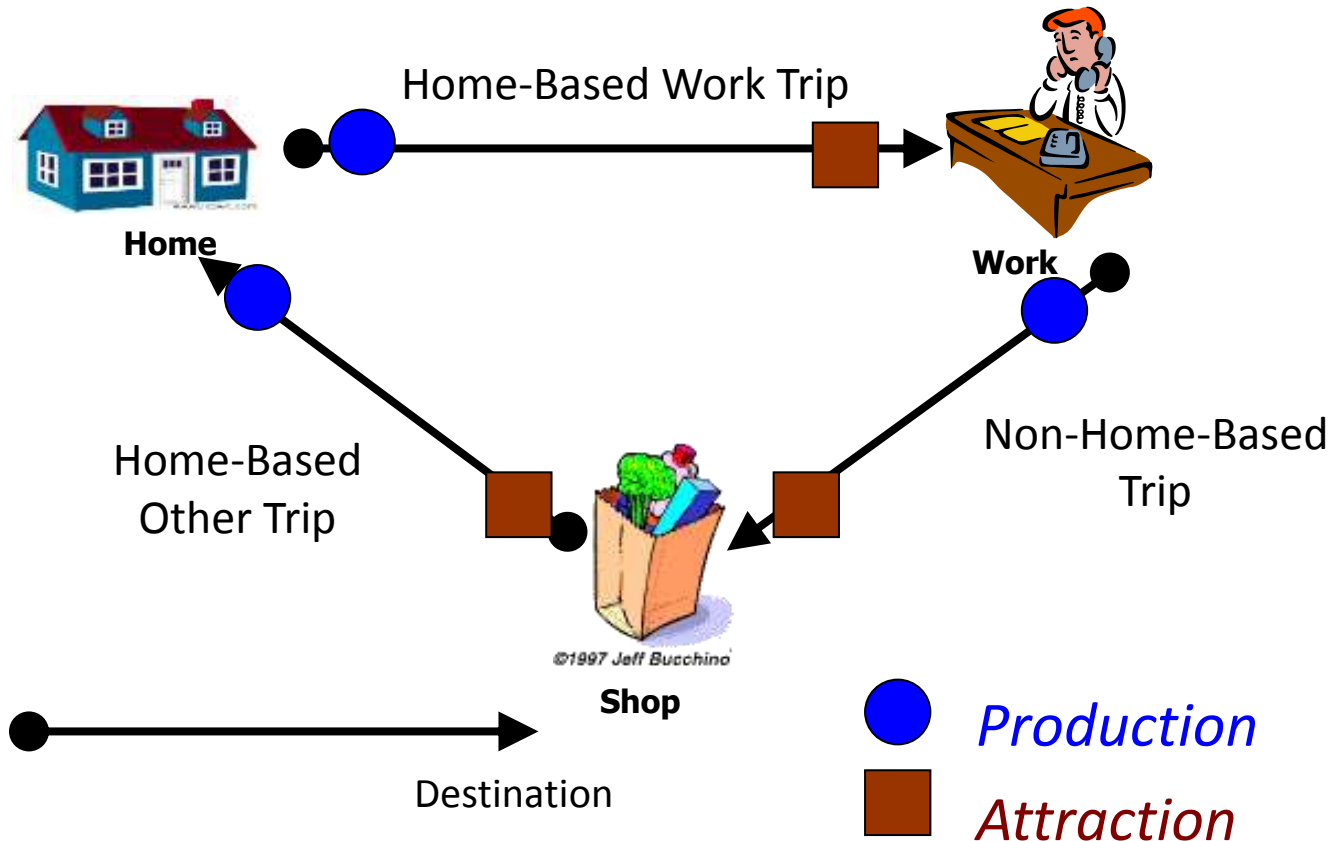
Travel Patterns and User Characteristics

How people move from place to place on the network.



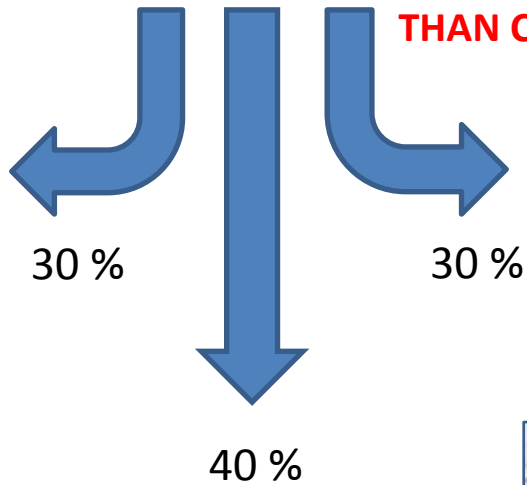
Model Simplifies Movement of People To Specific Types of Trips...

(Estimate of an Average Weekday for Most People)

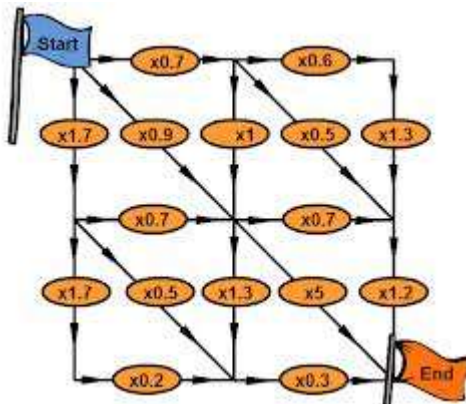


...AND PROVIDES INSIGHT TO HOW THE AREA'S TRANSPORTATION SYSTEM WILL BE
AFFECTED BY EXPECTED GROWTH AND CHANGES IN EMPLOYMENT AND/OR LANDUSE.

**TRAVEL PATTERN:
MORE ABOUT SPLIT
THAN COUNT**



TRIP ASSIGNMENT



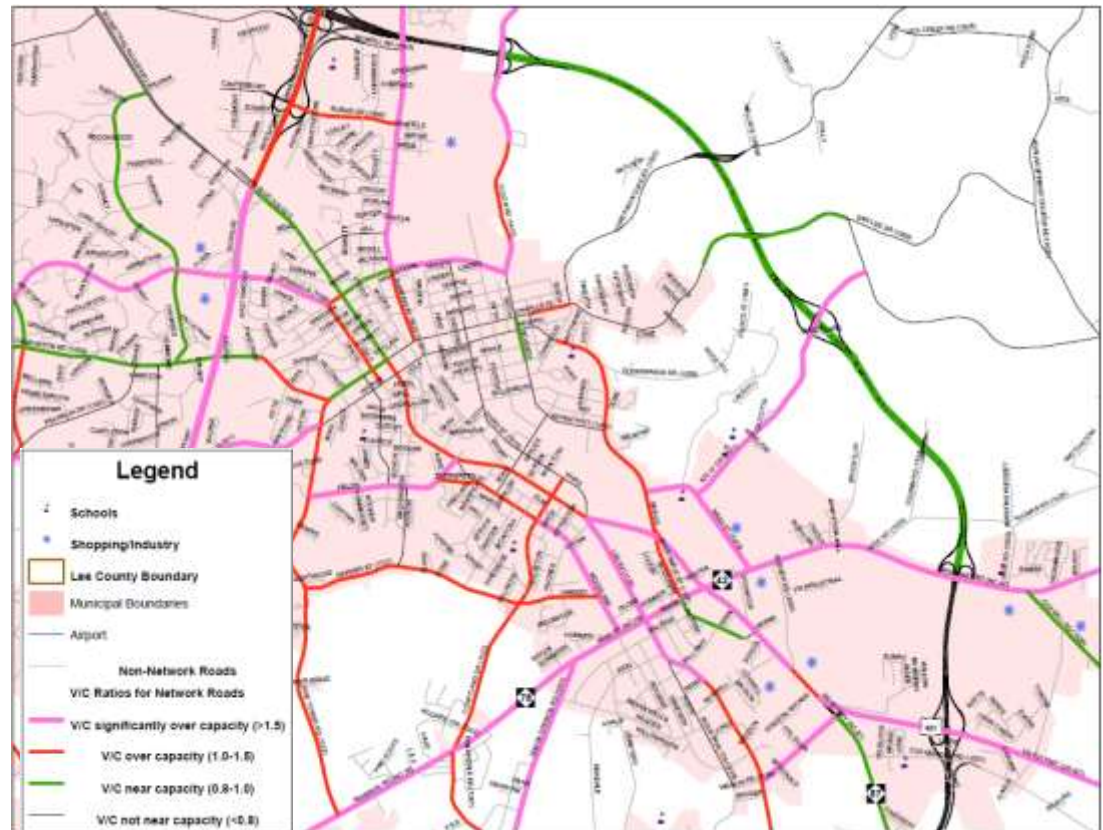
**EXTERNAL
STATIONS**

BASE YEAR: 2012

- Calibrating the Model

FUTURE YEAR: 2040

- Future Capacity Deficiencies
- Scenario Testing
- Improvements to Existing
- Impacts of New Routes
- Classification of Routes
- Number of Lanes
- Air Quality
- Vehicle Miles Traveled



Example: 2035 Capacity Deficiencies Map - Lee County (See Handout)

http://www.ncdot.gov/doh/preconstruct/tpb/PDF/LeeCo_CapDef_2035_Aug172006_poster.pdf

Milestones Going Forward for O & D Study and Model Development

1. Data Collection is a Collaborative Process

Target Date: December 14th Employment Data Returned to NCDOT.

Final Municipal submittal December 14, 2012.

Socio-economic data (population, household, employment, area data)

- ✓ **A. PB - Population and Household**
- ↻ **B. TARPO, Local planning staff, NCDOT - Employment, School, Hospital, Military data**
- C. MCTC, local planning staff, local county and municipal Boards – Endorsement**



Milestones Going Forward for O and D Study and Model Development

2. Origin and Destination Study Results

- Goal: By the End of January
- **4 week shift due to submittals and holiday**
 - A. MCTC Meeting
(End January – Model development and Future Growth)
 - B. Formal introduction to PB staff & Presentation on Model Development and Results of O & D
(End February – Results of O&D)

Milestones Going Forward for O & D Study and Model Development

3. Base year data and results

- By the End of March **Hope to meet....**
 - A. MCTC Meeting
 - B. PB to present base year data
 - C. MCTC, local planning staff, local county and municipal Boards



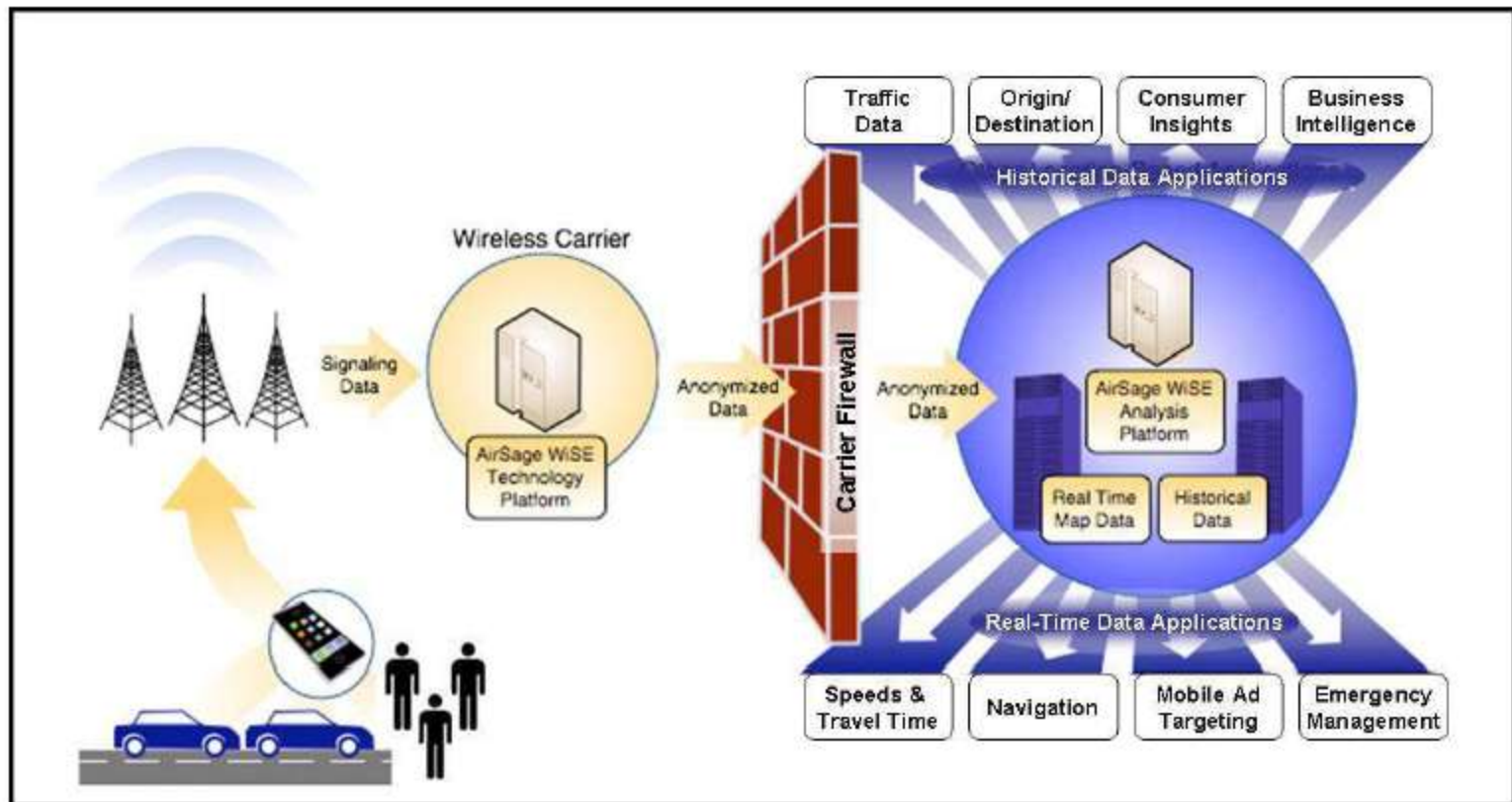
4. Future year data and results

- By the End of April
 - A. MCTC Meeting
 - B. PB to present 2040 No Build
 - C. MCTC and local planning staff to advise NCDOT on next steps



AirSage – What we do and how we do it

AirSage Information Flow



Capital Area Metropolitan Planning Area By Census Tract

The Difference Between Planning



Raleigh Study Area

A map of the Raleigh study area at the census tract level.

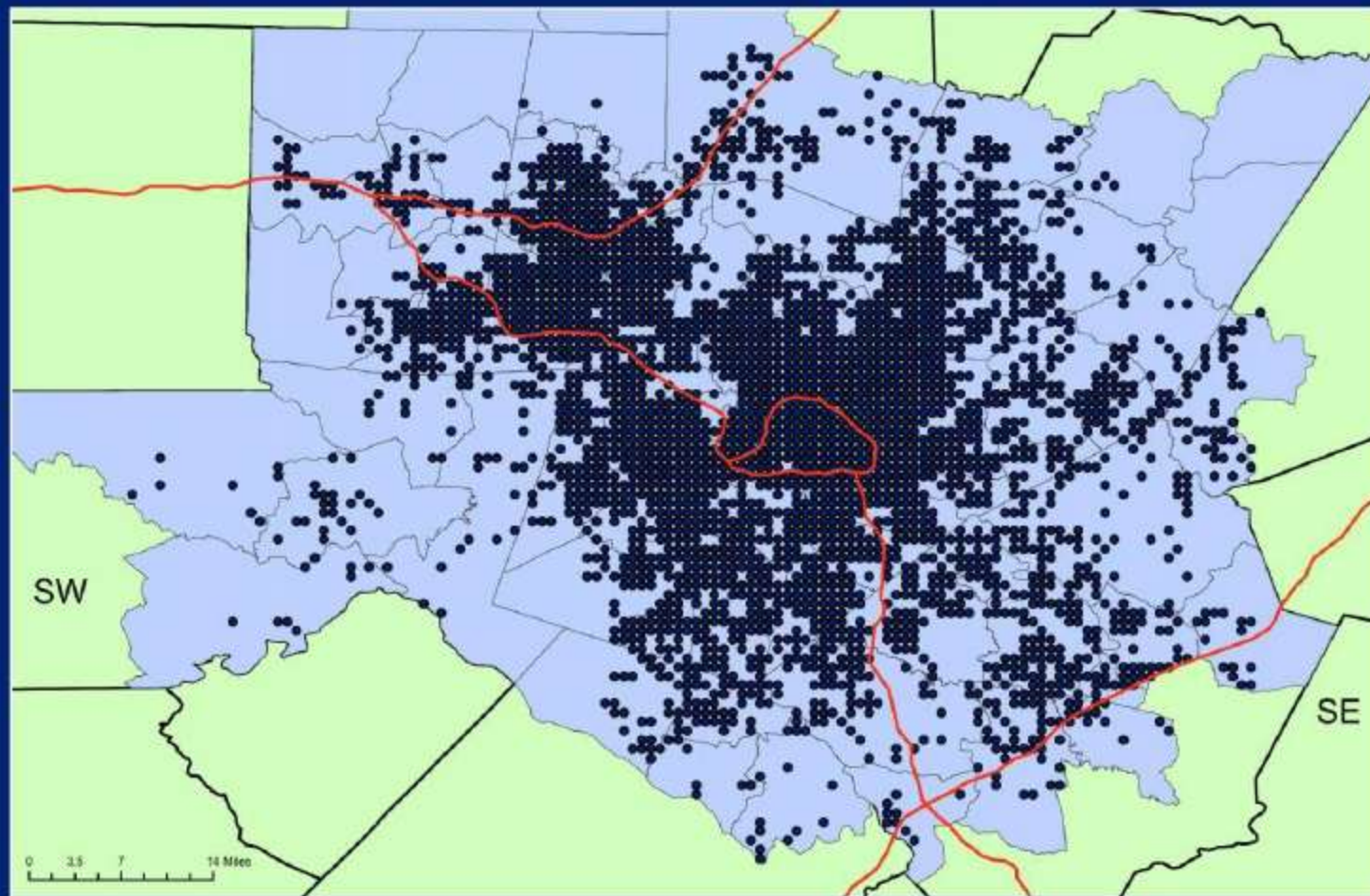
Legend

- Capital Cities
- Interstate Highways
- State Boundaries
- Raleigh Census Tracts
- Counties

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400 Embassy Row NE
Suite 100
Atlanta, GA 30326
877-307-1301
All maps are proprietary and confidential.

AIRSAGE

Snap Shot of Data Points at 12:01 AM



Home Locations

Home locations based on Home-Work pairs.

Legend

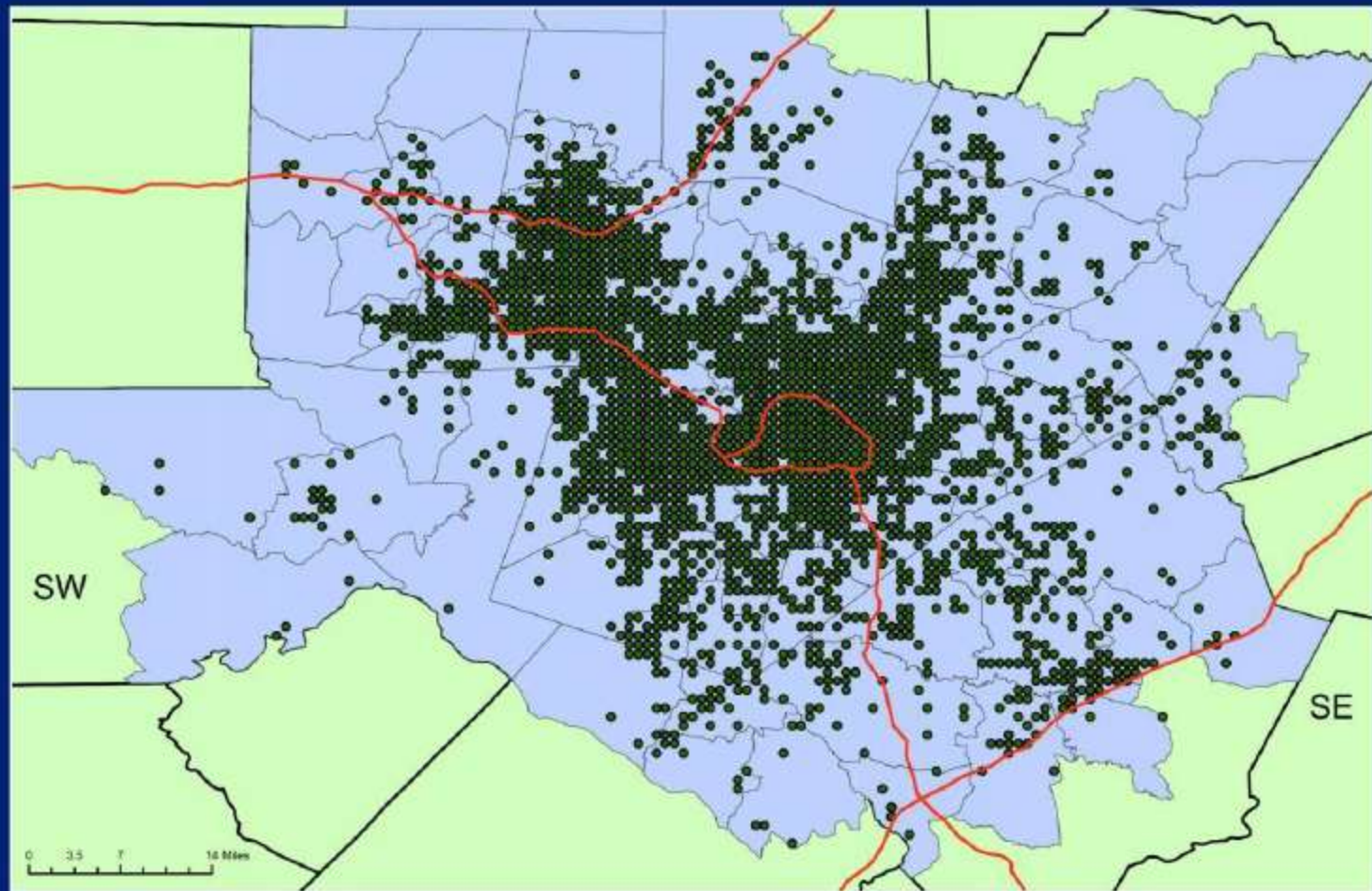
- Interstate Highways
- HomeLocations
- Raleigh Tracts
- Counties

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Contact Bill King: 770-329-0863
All maps are proprietary and confidential.

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Snap Shot of Data Points Mid-Work Day



Work Locations

Work locations based on Home-Work pairs.

Legend

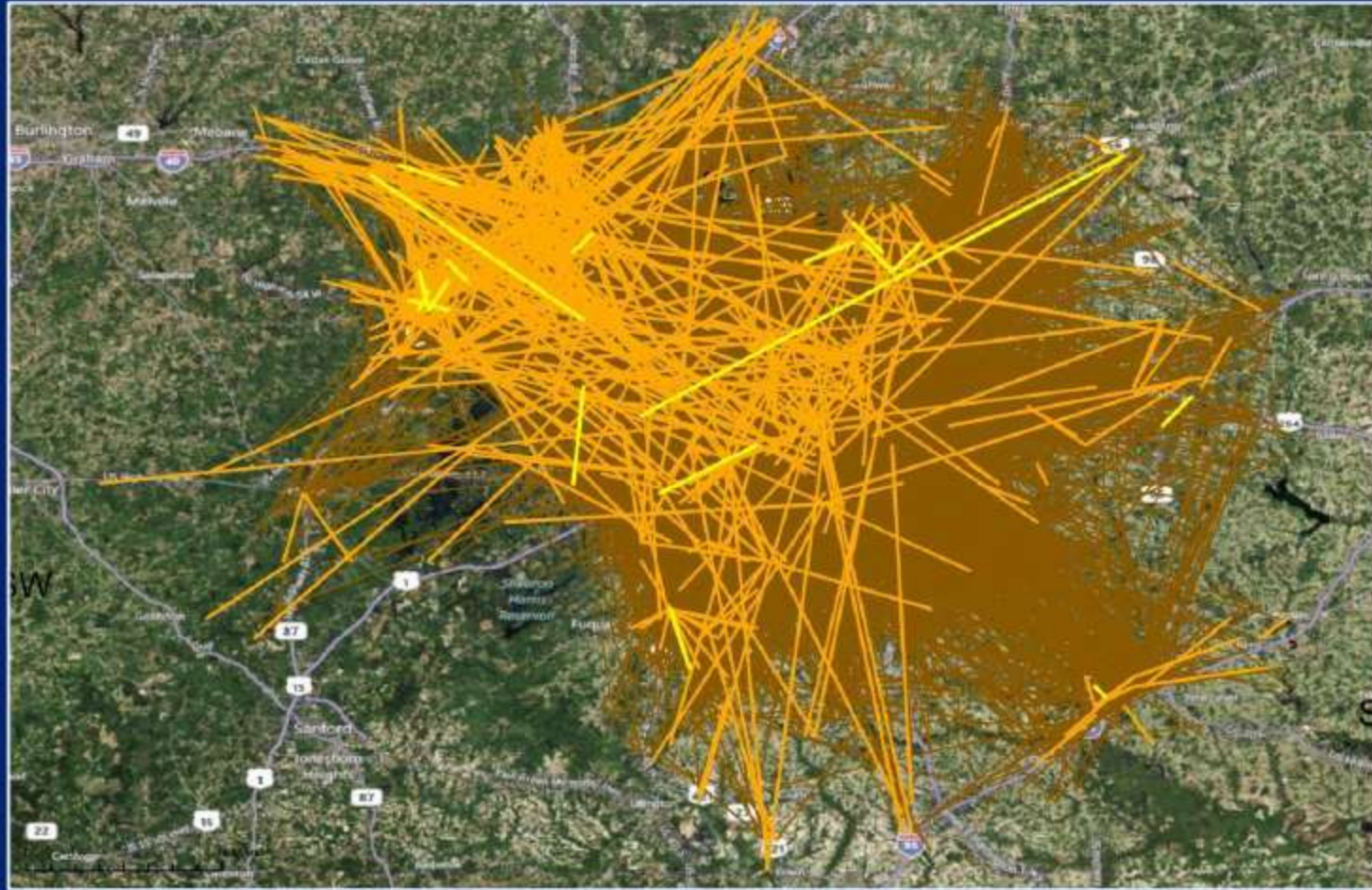
- Interstate Highways
- WorkLocations
- Raleigh Tracts
- Counties

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AIRSAGE

Resulting Vectors



Home-Work Trips

Non-Adjacent Grids

Legend

- NonAdjacent_Trips+100
- NonAdjacent_Trips50-99
- NonAdjacentTrips_Line

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AIRSAGE

WOW! That is a lot of Information!

Station Break

Questions?



Comments?



Preservation of
Local Character.



Mounting
congestion on
local roadways.



US 1 Corridor



Small Communities Impacted by Growth



Cultural and Environmental Resources



Public
Safety



Community Vision.